



California ISO
Your Link to Power

Long Term Transmission Integration Planning at the California ISO

**Intermittency Analysis Project (IAP)
Energy Commission Staff Workshop**

February 13, 2007

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2006 CAISO Transmission Plan

- The first CAISO Transmission Plan was presented to the CAISO Board of Governors in January
 - Plan presented to stakeholders in early December
- An old era ends
 - Individual PTO plans received and reviewed
 - CAISO review focused on individual projects, not an overall plan
 - Operational concerns/issues generally were not addressed
- A new era begins with this 2006 Transmission Plan
 - Single transmission plan for the CAISO Controlled Grid
 - PTO and CAISO projects combined into a single plan
 - Operations, short-term, mid-term, and long-term focus
 - CAISO review focuses on overall plan
 - Consistent with sub-regional planning principles



What Is In the “Plan”

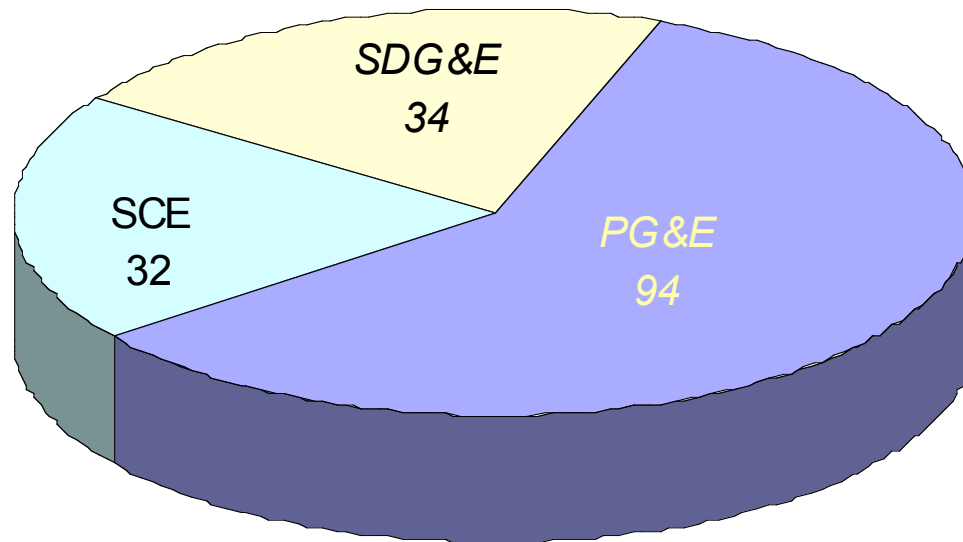
- Annual transmission plan prepared jointly by the CAISO and PTOs and reviewed by stakeholders
- Coordinated with the PTOs, CEC, and CPUC
- Documents all CAISO and PTO studies
 - All projects under \$20M approved by CAISO Management
 - All projects \$20M or greater are listed but individually approved by CAISO Board
 - All projects that are anticipated to be brought before the CAISO Board
- Projects to be considered for “approval” by the CAISO must be in the Plan
 - No more closure letters
- Fifteen year planning horizon
- Five year LCR horizon
- Baseline deliverability studies
- Integrate relevant CEC IEPR recommendations

2006 “Plan” Highlights

Transmission

- Documents 160 transmission project proposals
- Includes the seven CAISO Transmission Initiatives presented to the Board in April 2006

Number of Projects





2006 “Plan” Highlights *Transmission*

- Summarizes major California and inter-regional planning initiatives
 - Tehachapi Project
 - Sun Path Project (Sunrise + Green Path)
 - LEAPS Project
 - Trans Bay Cable Project
 - Midway – Gregg Line
 - Frontier Line
 - New British Columbia – California Line
 - West Coast Cable Project



2006 “Plan” Highlights

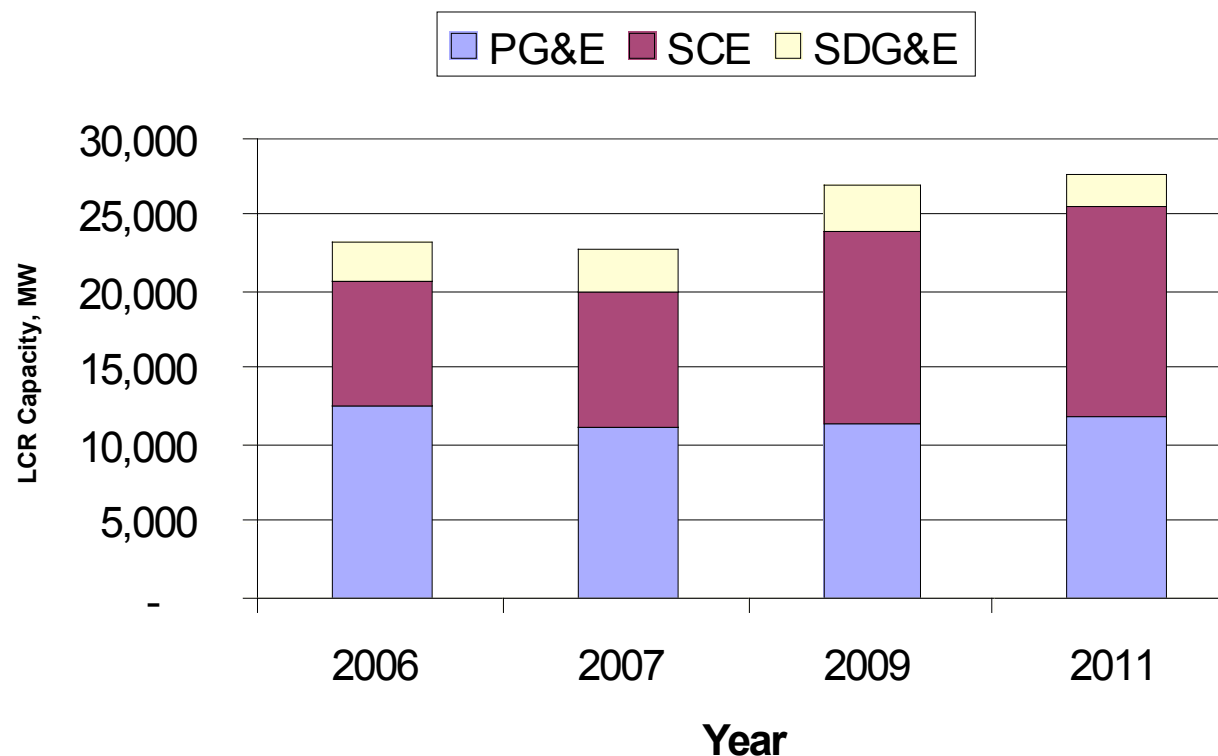
Deliverability

- Phase I
 - Evaluation of all generation expected to be in operation in 2006 (58,000 MW)
- Phase II Complete by February 2007
 - Phase IIA evaluates all generation in the interconnection “queue” as of March 30, 2005 (22,000 MW)
 - Phase IIB will include all remaining generation in the interconnection queue
- Phase II Report
 - List of new resources that do not pass deliverability test
 - Amount of non-deliverable capacity for new resources
 - Conceptual transmission project alternatives that would ensure their deliverability

LCR Outlook

Requirements For 2006 & 2007

Anticipated Trend 2009 & 2011





2006 “Plan” Highlights

Short-term Plan and Operating Guides

- Short-term Plan
 - Analyzes system from 1 to 3 years in advance and recommends to anticipated operations and reliability issues
 - Focuses on operational gaps; congestion and reliability
 - 21 recommendations proposed to PTOs based on 2006 summer operation
- Operating Guide
 - Consolidates the next year calendar projects
 - *53 projects calendared for 2007*
 - Describes the transmission impacts of the project
 - Relates each project to the affected Operating Procedures
 - Provides a work-plan for updating OTC, Operating Procedures, and necessary tools



2006 “Plan” Highlights

- Area assessments
 - Detailed assessment and analysis of the CAISO Controlled Grid
 - Ten-year planning horizon
 - CAISO staff has identified over 30 LCR, Deliverability, and congestion issues across the Grid
 - Solutions are being considered for all issues
- Future Plans (2007)
 - Scenario assessments (i.e. generation retirement/repowering)
 - Congestion analysis pre and post MRTU
 - Resolution to LCR issues
 - Long-term Firm Transmission Rights
 - Import allocations within a Resource Adequacy framework
 - Probabilistic planning (LOLP) for LCR and Capacity Market
 - Rebuttable presumption
 - Third category of new transmission facilities



Justification of New Transmission

- Network upgrades
 - Reliability
 - Economic
- Generator Tie-Lines
- Proposed 3rd Category – Transmission to interconnect multiple generation resources that are locationally constrained:
 - wind generation parks,
 - concentrated solar generation facilities,
 - geothermal generation resources, etc.



New Transmission for Location Constrained Resources

- Concept similar to justifying new gas pipelines – “Open Season” process
- Key Principles for Eligibility
 - Not a network facility or generator tie
 - New Transmission is required to access significant energy resource that is not transportable
 - Transmission will be under CAISO operational control
 - Must serve multiple power plants with non-transportable energy resource
 - Evaluated with prudent grid planning process
 - Economic impact is limited – TAC rate impact limited to 5% over a 10 year period.
 - Demonstrated commercial interest from multiple generation developers

CAISO Renewables Action Plan

Primary Goal(s) / Objectives:

The objective is to support the State's goal of 20% of customer load being served by renewable resources by the end of 2010 and 33% by 2020.

This is a CAISO coordinated action program with the CEC and the Investor Owned Utilities to address the many integration issues such as:

- **Transmission planning for delivery of energy from renewables to load centers**
- **Integration with Markets, and**
- **Mitigation of Operational Issues**

Report and recommendations is due July 2007



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End of Presentation